

TRACYINA, A NEW GENUS OF ASTERACEAE  
FROM NORTHERN CALIFORNIA

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Dr. Herbert L. Mason of the University of California has recently referred to me for examination specimens of a composite collected in Humboldt County, California, in 1916 by Mr. Joseph P. Tracy. The plant is superficially similar to *Rigiopappus leptocladus* Gray, with which it occasionally grows, in stem and foliage, and particularly in its habit of developing not far below the terminal head a group of filiform 1-headed branches which surpass the main stem and often branch similarly themselves. In its technical characters, however, the plant shows a close relationship to *Pentachaeta*, although it differs so strikingly from all members of that genus in its slender-fusiform short-beaked achene, its graduate pappus of numerous capillary bristles, and various minor characters that it must be regarded as the representative of a new genus. In *Pentachaeta* the involucre is 2-seriate and subequal, or strongly graduated and about 5-seriate (in *P. aurea*), of mostly oblong or lance-oblong, rarely lance-linear, thin and submembranous, greenish-centered, scarious-margined phyllaries, which persist even after the fall of the achenes; the achenes are oblong or obovoid, somewhat compressed, weakly 5-nerved or nerveless, truncate, not at all narrowed or rounded and slightly contracted at the apex; the pappus is variable, of 3-24 strictly 1-seriate slender rigid hispidulous bristles, typically shortly paleaceous-dilated at base, persistent or fragile and easily detergible, sometimes reduced to short bristles or cusps, or even wanting; and the style branches have a short stigmatiferous portion and much longer, linear, obtuse to acute, hispid or hispidulous appendages. In the new genus the involucre is strongly graduate, about 4-seriate, of narrowly linear readily deciduous phyllaries; the achenes are slenderly fusiform, subterete, and weakly about 5-nerved, drawn out above into a more or less distinct beak with slightly dilated pappiferous apex; the distinctly graduated pappus is composed of about 36-38 fragile but rather persistent, hispidulous, capillary bristles; and the stigmatiferous portion of the style branches is about equal to the lance-subulate acuminate hispid appendage.

The "Herba Impia" habit of the new plant, so suggestive of *Rigiopappus*, is rarely seen in *Pentachaeta aurea* but can be matched in occasional examples of that plant, for example *G. B. Grant 924* (Strawberry Valley, San Jacinto Mts., in U. S. Nat. Herb.). In this collection the peduncles and tips of branches are glabrous at apex, but in other specimens they are loosely pilose precisely as in the new plant. The leaves of the new plant are a little broader

and firmer and perhaps more stiffly ciliate than the average of *Pentachaeta aurea*, but, considering the variation exhibited by this species as a whole, I can find in herbarium specimens no constant distinctive character until one comes to the heads. Somewhat similar cases of "mimicry" are shown by other California Asteraceae—particularly *Crockeria chrysantha* Greene and *Lasthenia glabrata* Lindl., *Monoptilon bellidiforme* T. & G. and *M. bellioides* (Gray) Hall (the two latter very distinct in their extreme forms, but too intimately connected by apparently individual variation for satisfactory generic separation)—but in these cases the ranges of the members of each pair overlap. *Pentachaeta aurea*, however, is a plant of southern California, not known within about three hundred miles of the area of the new plant, although other, not "mimetic" species of *Pentachaeta* range north to Marin and Mendocino counties. Mrs. Katherine Brandegee,<sup>1</sup> discussing the case of *Crockeria* and *Lasthenia*, suggested hybridity as the explanation of the origin of one of the forms in question, but in the present case this explanation cannot be invoked. The one likely parent is absent and no candidate for the place of the other is evident. *Pentachaeta aurea*, *Rigiopappus leptocladus*, and the new plant all occupy, apparently, much the same sort of habitat—dry grassy hillsides—and their resemblances in habit and foliage can probably be correlated with this fact, reinforced in the case of the new plant by a probable genetic connection with the *Pentachaeta* stock. The structural differences separating it from *Pentachaeta* are, however, too significant to permit its inclusion in that genus.

Although the natural relationship of the new genus is undoubtedly with *Pentachaeta*, its much more copious and graduated pappus would place it in the accepted arrangement of the subtribe Solidagininae next to *Aplopappus*, from which its beaked achene at once distinguishes it. The genus may appropriately be named for its discoverer, Mr. Joseph P. Tracy of Eureka, California, whose extensive collections in northwestern California, made over a period of more than thirty years, have contributed materially to our knowledge of the flora of that part of the state. A nearly complete set of his collections, amounting to over twelve thousand numbers, is deposited in the Herbarium of the University of California.

**Tracyina** Blake, gen. nov. Herba annua parva tenuissima prope apicem pauciramosa praeter apices caulis ramorumque et margines foliorum glaberrima, foliis alternis lineari-lanceolatis integerrimis hirsuto-ciliatis, capitulis mediocribus solitariis multifloris heterogamis flavis inconspicue radiatis, radiis erectis. Involucri subcylindrici (sicc. turbinati) gradati ca. 4-seriati phyllaria linearia acuminata appressa plana 1-vittata submembranacea viridescencia anguste scarioso-marginata. Receptaculum parvum planum nudum serobiculatum. Radii 1-seriati feminei fertiles

<sup>1</sup> Zoe 5: 95. 1901.

flavi dorso plusminusve rubicundi, tubo elongato, lamina parva erecta elliptica bidenticulata. Flores disci flavi quoad numerum radiis subaequales hermaphroditi fertiles, corollis tubulosis anguste cylindrico-infundibuliformibus, tubo in faucem sensim ampliato, dentibus 5 parvis ovatis erectis. Stamina 5, antheris basi integris, apice appendice parva triangulari acuminata munitis. Styli rami lineari-lanceolati, appendice lanceolato-subulata acuminata hispida partem stigmatiferam aequante donati. Achenia tenuiter fusiformia subteretia tenuiter ca. 5-nervia hispida basi paullum angustata sursum longe angustata breviter rostrata, apice ipso pappifero paullum dilatato. Pappi persistentis sed fragilis gradati setae ca. 36-38 capillares hispidulae.—Species typica *T. rostrata*, sp. nov.

*Tracyina rostrata* Blake, sp. nov. Annua erecta pedalis saepius paene ad apicem simplex, prope apicem pauciramosa, ramis filiformibus supra medium bracteatis prope apicem saepe iterum ramosis; caulis glaber foliosus; folia alterna anguste lineari-lanceolata acuminata sessilia integra erecta laete viridia 1-nervia hirsuto-ciliata; capitula ca. 30-48-flora in apicibus caulis et ramorum et ramulorum solitaria mediocria v. parva, primum pedunculatum cetera subsessilia; phyllaria anguste linearia glabra; radii ca. 15-22, corollis ligulatis erectis disco paullo longioribus; achenia radii sparsissime, ea disci dense hispida; pappus albidus achenio brevior.

Plant 15-30 cm. high; stems solitary, erect, whitish, usually simple nearly to apex or occasionally with a few erect branches from near the base, terete, not striate, 1 mm. thick or less, strictly glabrous, terminated by a single head and usually bearing about 1.5-5 cm. below this head 2-4 filiform ascending branches 2.5-10.5 cm. long, these arising close together (within 0.5-2 cm.), naked below, rather densely leafy from about the middle to apex with reduced, bract-like, subulate or lance-subulate leaves and often branched in the same fashion as the main stem; leaves appressed or erect, narrowly lance-linear, the larger 1.2-2.4 cm. long, 1-2 mm. wide, acuminate, acutely callous-apiculate, sessile by a slightly narrowed base, entire, plane or somewhat involute toward tip, light green, densely hirsute-ciliate, otherwise glabrous, or obscurely hirsutulous on upper face, 1-nerved and with 1 pair of weak lateral veins; terminal head usually on a more or less distinct, sparsely setaceous-bracteate peduncle 1.5-2.5 cm. long, those of the branches usually sessile, the peduncle or branch somewhat thickened and striate below the head and there loosely pilose; heads about 30-48-flowered, turbinate when pressed, subcylindric when moistened, 9-10 mm. high (in fruit), the larger 1.5 cm. thick (in fruit, as pressed); involucre 6-7 mm. high, the phyllaries narrowly linear (0.3-0.5 mm. wide), passing into the bracts of the branch, readily deciduous; rays about 15-22, the tube about 3 mm. long, glabrous or slightly hispidulous above, the



Fig. 1. *Tracyina rostrata* Blake. *a*, upper part of plant,  $\times 1$ ; *b*, disk achene,  $\times 8$ ; *c*, disk flower,  $\times 8$ ; *d*, style branches,  $\times 28$ ; *e*, two stamens,  $\times 32$ ; *f*, ray flower,  $\times 8$ ; *g*, head,  $\times 3$ ; *h*, ray achene,  $\times 8$ , part of the pappus omitted. All drawn from the type.

lamina narrowly elliptic, about 1.5 mm. long, 0.4 mm. wide, bidenticulate, glabrous, in the dried state pale yellow, reddish on the back; disk flowers about 15–26, pale yellow, sparsely hirsutulous on throat and teeth, slenderly cylindric-funnelform, 4 mm. long (tube 1.4 mm., throat 2.3 mm., teeth ovate, 0.3 mm. long); mature achenes slenderly fusiform, shortly rostrate, not filled by the seed, 5.5 mm. long, 0.3–0.4 mm. thick, those of the

ray very sparsely, those of the disk densely hirsutulous with bidenticulate hairs; pappus of about 36-38 graduated persistent hispidulous bristles, the inner 3.8 mm., the outer about 1 mm. long.

CALIFORNIA. Dry grassy hills, Alder Point, alt. 245 m., 23 May 1903, *Tracy 1892* (Herb. Univ. Calif.); on warm grassy slopes, Alder Point, on Eel River, southeastern Humboldt Co., alt. 300 m. (1000 ft.), 20 June 1916, *J. P. Tracy 4735* (type no. 549767, Herb. Univ. Calif.; duplicate, U. S. Nat. Herb.); grassy slopes, Dobbyn Creek, Humboldt Co., alt. 150 m., 15 June 1930, *Tracy 8762* (U. S. Nat. Herb.)

According to information furnished by Mr. Tracy, the plant is frequent but inconspicuous in short grass on warm grassy slopes at elevations of 300 to 1000 feet from about two miles south of Alder Point northeast about five miles to Dobbyn Creek. It is very similar in habit to *Rigiopappus leptocladus*, but taller, and generally grows in better soil, although occasionally the two are found together. The fruiting heads resemble those of *Agoseris heterophylla*, which grows abundantly in the same places.

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## VEGETATIONAL SURVEY OF THE LOWER RIO GRANDE VALLEY, TEXAS

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### III. COASTAL CLIMAX ASSOCIATIONS

This area includes the sandy beach, sand dunes (*medaños*), salt flats (*badilla salitrosa*) and the salt grass region known as the *sacahuistal*. There are certain differences in the types of vegetation at different points along the coast. At Red-Fish Bay (Willacy County) where the Sand Belt dips down to the coast, the *zacatal* vegetation persists to the water's edge. Some *Spartina Spartinae* may be found, but in general the typical coast flora is lacking. Just south of the Bay, long estuaries reach inland for some distance and the Raymondville and Port Isabel Clays support the flora common to salt marshes.

Boca Chica offers an excellent opportunity for a study of coast phytogeography. The beach is sandy with shifting dunes. Back of these low dunes there are others sometimes twenty to twenty-five feet high which are stable and covered with vegetation. Barren salt flats and salt marshes reach out into the grassland along the coast, and small islands lie between Brazos Santiago Island and the mainland.

BEACH VEGETATION. There are few plants along the beach which are not found on the dunes. In fact the dunes usually are reached by high tides. *Cakile maritima* var. *aequalis*, *Portulaca*